

Jennifer Fiegel, Ph.D.

Department of Pharmaceutical Science and Experimental Therapeutics (Joint Appointment)
Department of Chemical and Biochemical Engineering (Joint Appointment)
University of Iowa
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EDUCATION

- May 2004 Ph.D. Chemical and Biomolecular Engineering, The Johns Hopkins University, Baltimore, MD. Dissertation: *Poly(ether-anhydride) Dry Particle Aerosols*.
Advisor: Dr. Justin Hanes.
- May 1998 B.S. Chemical Engineering, University of Massachusetts at Amherst, Amherst, MA.
Thesis: *Optimization of a Method to Measure Adsorption Isotherms at Low Pressures*.
Advisor: Dr. W. Curtis Conner

PROFESSIONAL EXPERIENCE

Academic Positions

- 2009- Assistant Professor
Department of Pharmaceutical Science and Experimental Therapeutics, College of Pharmacy, University of Iowa, Iowa City, IA
- 2006- Assistant Professor
Department of Chemical and Biochemical Engineering, College of Engineering, University of Iowa, Iowa City, IA
- 2006-2009 Assistant Professor
Division of Pharmaceutics, College of Pharmacy, University of Iowa, Iowa City, IA
- 2004-2006 Postdoctoral Fellow
Division of Engineering and Applied Sciences, Harvard University, Cambridge, MA
Mentor: Dr. David Edwards
- 1998-2003 NSF Graduate Student Fellow
Chemical and Biomolecular Engineering Department, The Johns Hopkins University, Baltimore, MD

Other Positions

- Dec 2009- Associate Faculty Member, Environmental Health Sciences Research Center, University of Iowa
- Apr 2009- Associate Faculty Member, Center for Gene Therapy of Cystic Fibrosis and Other Genetic Diseases, University of Iowa
- 2007- Faculty Committee Member, The National Institute for Pharmaceutical Technology and Education
- 2007- Faculty Member, Nanoscience and Nanotechnology Institute, University of Iowa
- 2007-2009 Affiliate Faculty Member, Center for Gene Therapy of Cystic Fibrosis and Other Genetic Diseases, University of Iowa

HONORS AND AWARDS

- 2009 Finalist: Iowa Women of Innovation Award for Academic Innovation and Leadership
- 2007 PhRMA Foundation Research Starter Grant
- 2007 Old Gold Summer Fellowship, The University of Iowa
- 2006 Selected as one of two University of Iowa nominees for the 2006 Burroughs Wellcome Fund: Investigators in the Pathogenesis of Infectious Disease program
- 2003 Best Paper Award, Aerosole in der Inhalationstherapie VIII, Marburg, Germany.
(English Translation: "Aerosols in Inhalation Therapy").

1999-2002 National Science Foundation Fellowship for Graduate Research
1997 Elected to Tau Beta Pi, Full Member

PEER REVIEWED PUBLICATIONS

1. J.S. Patton, J.D. Brain, L.A. Davies, J. Fiegel, M. Gumbleton, K.-J. Kim, M. Sakagami, R. Vanbever, C. Ehrhardt. The particle has landed – Characterizing the fate of inhaled pharmaceuticals. *J. Aerosol Med. Pulm. Drug Deliv.* Submitted.
2. S. Ross, E. Thomas, B. Stohs, J. Fiegel. Treating lung biofilm infections: Dispersion and eradication via dry powder aerosols. *Respir. Drug Deliv.* 2010. Accepted.
3. J. Fiegel, L. Garcia-Contreras, M. Thomas, J. Verberkmoes, A. Hickey, D. Edwards. Preparation and *in vivo* evaluation of a dry powder for inhalation of capreomycin. *Pharm. Res.* 2008; 25(4): 805-811.
4. L. Garcia-Contreras, J. Fiegel, M.J. Telko, K. Elbert, A. Hawi, M. Thomas, J. VerBerkmoes, W.A. Germishuizen, P.B. Fourie, A.J. Hickey, D. Edwards. Inhaled large porous particles of capreomycin for the treatment of tuberculosis in a guinea pig model. *Antimicrob. Agents Chemother.* 2007; 51(8): 2830-2836.
5. W. Watanabe, M. Thomas, R. Clarke, A. Klibanov, R. Langer, G. Fuller, L. Griel, J. Fiegel, D. Edwards. Why inhaling salt water changes what we exhale. *J. Colloid Interface Sci.* 2007; 307(1): 71-78.
6. J. Fiegel, R. Clarke, D. Edwards. Airborne infectious disease and the suppression of exhaled aerosols [review]. *Drug Discovery Today.* 2006; 11(1-2):51-57.
7. D.A. Edwards, J. Fiegel, W. DeHaan, M. Brande, J. Man, R. Clarke. Novel inhalants for control and protection against airborne infections [review]. *Respir. Drug Deliv.* 2006; 1: 41-48.
8. J. Fiegel, F. Jin, J. Hanes, K. Stebe. Wetting of a particle in a thin film. *J. Colloid Interface Sci.* 2005; 291(2):507-514.
9. J. Fiegel, J. Fu, J. Hanes. Poly(ether-anhydride) microparticle aerosolization improved by controlling particle surface properties. *J. Control. Release.* 2004; 96(3):411-423.
10. J. Fu, J. Fiegel, J. Hanes. Synthesis and characterization of PEG-based ether-anhydride terpolymers: Novel polymers for pulmonary drug delivery. *Macromolecules*; 2004. 37(19): 7174-7180.
11. J. Fiegel, C. Ehrhardt, U.F. Schaefer, C.-M. Lehr, J. Hanes. Large porous particle impingement on lung epithelial cell monolayers: Toward improved particle characterization in the lung. *Pharm. Res.* 2003; 20(5):788-796.
12. J. Fu, J. Fiegel, E. Krauland, J. Hanes. New polymer carriers for pulmonary drug delivery. *Biomaterials* 2002; 23(22):4425-4433.
13. C. Ehrhardt, J. Fiegel, S. Fuchs, R. Abu-Dahab, U.F. Schaefer, J. Hanes, C.-M. Lehr. Drug absorption by the respiratory mucosa – Cell culture models and particulate drug carriers. *J. Aerosol Med.* 2002; 15(2):131-139.
14. C. Ehrhardt, C. Kneuer, J. Fiegel, J. Hanes, U.F. Schaefer, K.-J. Kim, C.-M. Lehr. Influence of apical fluid volume on the development of functional cellular junctions in the human bronchial epithelial cell line 16HBE14o-: implications for the use as an *in vitro* model for drug absorption. *Cell & Tissue Research* 2002; 308:391-400.

Book chapters:

1. T. Brenza, R. Hamed, and J. Fiegel. Controlled transport for pulmonary drug delivery. *In:* H. Smyth and A. Hickey (eds.) *Controlled Release Science and Technology: Pulmonary Delivery.* Philadelphia: Elsevier. Submitted.
2. J. Hanes, M. Dawson, Y. Har-el, J. Suh, and J. Fiegel. Gene Therapy in the Lung. *In:* A. J. Hickey (ed.) *Pharmaceutical Inhalation Aerosol Technology*, 2nd edition. Vol. 134. New York: Marcel Dekker Inc. 2003.

PUBLISHED ABSTRACTS AND PROCEEDINGS

1. T. Brenza, M. Apicella, J. Fiegel. Fate and Toxicity of Engineered Nanoparticles in a Physiologically-Relevant In Vitro Model of Tracheobronchial Airways. *American Association of Pharmaceutical Scientists (AAPS) Annual Conference Proceedings*, Los Angeles, CA, 2009.
2. T. Brenza, M. Apicella, J. Fiegel. Nanoparticle delivery vehicle to mimic bacterial invasion of lung epithelium. *Proceedings of the American Institute of Chemical Engineers*, Nashville, TN, 2009.
3. R. Hamed, J. Fiegel. Development of a more physiologically-relevant mucus mimetic of the upper respiratory tract. *Proceedings of the American Institute of Chemical Engineers*, Nashville, TN, 2009.
4. T. Brenza, M. Apicella, J. Fiegel. Muco-avoidance and epithelium attachment of respiratory nanoparticle delivery vehicles. *44th Annual Midwest Regional Meeting of the American Chemical Society*, Iowa City, IA, 2009.
5. T.M. Brenza, J. Fiegel. Lipooligosaccharide-coated nanoparticles as a targeting strategy for lung epithelial uptake. *J. Aerosol Med* 2009; 22(2): 198.
6. S. Sommerfeld, E. Thomas, B. Stohs, J. Fiegel. Development of a dry powder aerosol for the dispersion and eradication of respiratory biofilms. *J. Aerosol Med* 2009; 22(2): 203.
7. R. Hamed, J. Fiegel. Investigating the properties of lung mucus: Toward understanding the role of mucus physicochemical properties in bioaerosol formation. *J. Aerosol Med* 2009; 22(2): 204.
8. E. Thomas, B. Stohs, J. Fiegel. Development of a dry powder aerosol for the dispersion and eradication of respiratory biofilms. *Proceedings of the American Institute of Chemical Engineers*, Philadelphia, PA, 2008.
9. R. Hamed, J. Fiegel. Bioaerosol formation from lung surfaces: Evaluating the role of mucus physicochemical properties, *American Association of Pharmaceutical Scientists (AAPS) Annual Conference Proceedings*, Atlanta, GA, 2008.
10. S. Sommerfeld, B. Stohs, E. Thomas, J. Fiegel. Formulation and optimization of an antimicrobial aerosol for treatment of bacterial lung infections. *AAPS Annual Conference Proceedings*, Atlanta, GA, 2008.
4. R. Hamed, J. Fiegel. Physiologically-relevant cough machine to study bioaerosol formation in the lungs. *AAPS Annual Conference Proceedings*, San Diego, CA, 2007.
5. L. Garcia-Contreras, J. Fiegel, M.J. Telko, K. Elbert, A. Hawi, M. Thomas, J. VerBerkmoes, W.A. Germishuizen, P.B. Fourie, A.J. Hickey, D.A. Edwards. Pharmacokinetics of inhaled capreomycin particles in the guinea pig. *AAPS Annual Conference Proceedings*, San Diego, CA, 2007.
6. L. Garcia-Contreras, J. Fiegel, M.J. Telko, K. Elbert, A. Hawi, M. Thomas, J. VerBerkmoes, W.A. Germishuizen, P.B. Fourie, A.J. Hickey, D.A. Edwards. Efficacy of inhaled capreomycin for the treatment of tuberculosis in the guinea pig. *AAPS Annual Conference Proceedings*, San Diego, CA, 2007.
7. J. Fiegel, L. Garcia-Contreras, K. Elbert, A. Hickey, D. Edwards. Dry powder aerosols for multi-drug resistant tuberculosis (MDR-TB) treatment. *Proceedings of the American Institute of Chemical Engineers*, Cincinnati, OH, 2005.
8. J. Sung, L. Garcia-Contreras, Y. Liu, J. Fiegel, J. Verberkmoes, K. Elbert, A. Hawi, R. Prud'homme, A. Hickey, D. Edwards. Formulation and in vivo results for a porous nanoscale drug delivery platform for tuberculosis. *36th UNION World Conference on Lung Health*, Paris, France, 2005.
9. J. Fiegel, W. Watanabe, G. Fuller, D. Edwards. Controlling the production of exhaled bioaerosols. *Proceedings of the American Institute of Chemical Engineers*, Cincinnati, OH, 2005.
10. J. Fiegel, J. Sung, D.A. Edwards. Aggregate nanoparticle formulations for TB treatment. *35th UNION World Conference on Lung Health*, Paris, France, 2004.
11. J. Fiegel, J. Hanes, K. Stebe. Modeling insoluble aerosol particle submersion in lung fluids: Line tension effects. *Proceedings of the American Institute of Chemical Engineers*, Austin, TX, 2004.
12. J. Fiegel, J. Fu, J. Hanes. Controlled release poly(ether-anhydride) large porous particles for pulmonary delivery. *J. Aerosol Med* 2003; 16: 212.
13. J. Fiegel, K. Stebe, J. Hanes. Modeling insoluble aerosol particle submersion in lung fluids. *Proceedings of the American Institute of Chemical Engineers*, San Francisco, CA, 2003.

14. J. Fiegel, J. Hanes. Effect of surface properties on aerosolization of PEGylated poly(ether-anhydride) microspheres. *Proceedings of the International Symposium on Controlled Release of Bioactive Materials* 2003; 30: 719-720.
15. C. Ehrhardt, J. Fiegel, U.F. Schaefer, J. Hanes, C.M. Lehr. Calu-3 bronchial epithelial cell monolayers to study drug release and absorption from aerosol particles in vitro. *Proceedings of the 4th World Meeting ADRITELF/APGI/APV* (Italian, French and German Societies for Pharmaceutical Technology) 2002; 1009-1010.
16. J. Fiegel, J. Fu, J. Hanes. New poly(ether-anhydride) aerosols: Control of particulate physical and chemical properties for improved aerosolization and deposition behavior. *Proceedings of the American Institute of Chemical Engineers*, Indianapolis, IN, 2002.
17. J. Fu, J. Fiegel, J. Hanes. Synthesis and drug release from PEG-containing poly(ether-anhydride) aerosols: New materials for pulmonary drug delivery. *Proceedings of the American Institute of Chemical Engineers*, Indianapolis, IN, 2002.
18. J. Fu, J. Fiegel, J. Hanes. Large, light polyether-anhydride microspheres: A new carrier for pulmonary drug delivery. *Proceedings of the International Symposium on Controlled Release of Bioactive Materials* 2001; 28: 393-394.
19. J. Fiegel, C. Ehrhardt, C.M. Lehr, J. Hanes. An in vitro method to characterize therapeutic aerosol particulates using lung epithelial cell monolayers. *Proceedings of the American Institute of Chemical Engineers*, Reno, NV, 2001.
20. J. Hanes, J. Fiegel, J. Fu. New polymers for controlled pulmonary drug delivery. *Annals of Biomedical Engineering* 2001; 29: S-138.
21. J. Fiegel, C. Ehrhardt, C.M. Lehr, J. Hanes. Air-interfaced lung epithelial cell monolayers for characterization of large light polymer aerosols. *Annals of Biomedical Engineering* 2001; 29: S-141.

PATENTS

1. J. Hanes, J. Fiegel, and J. Fu. Biodegradable polymer compositions: Compositions and uses related thereto, U.S. Patent No. 7,163,697 B2. Granted January 16, 2007.
2. J. Fiegel, J. Sung, D. Edwards. Particles for Treatment of Pulmonary Infection. (Claims accepted).

RESEARCH SUPPORT

Research Grants, awarded

National Science Foundation Major Research Instrumentation (Young, PI) 09/09-08/13

Role: Senior Personnel

Total Amount: \$629,422

“MRI: Development of a Single Particle Mass Spectrometer for Field and Laboratory Studies of the Environmental Impact of Atmospheric Aerosols and Engineered Nanoparticles”

Biological Sciences Funding Program 06/09-06/10

Role: PI

Total Amount: \$30,000

“Development of Inhalable Nanoparticles for Targeted Delivery to the Lung Epithelium”

Center for Gene Therapy of Cystic Fibrosis and Other Genetic Diseases 04/09-03/10

Role: PI

Total Amount: \$50,000

“Development of LOS-Modified Nanoparticles for Improved Airway Epithelial Uptake”

Center for Health Effects of Environmental Contamination 01/09-12/09

Role: PI

Total Amount: \$30,000

“Effect of Nanoparticle Physicochemical Properties on Lung Surfactant Function”

PhRMA Foundation 01/08-12/09

Role: PI

Total Amount: \$60,000

“Development of dry powder aerosols to disperse and eradicate *Pseudomonas aeruginosa* infections in the lungs”

Iowa Center for Research by Undergraduates (ICRU) Scholar Assistant 01/08-05/08

Support for an undergraduate research assistant

Total Amount: \$1,250

“Formulation and Optimization of Dry Powder Aerosols Containing a Bacterial Killing Enzyme”

Ulowa Old Gold Summer Fellowship 07/07-08/07

Role: PI

Total Amount: \$6,000

“Novel Aerosols for the Treatment of Opportunistic Respiratory Infections”

INVITED PRESENTATIONS

1. Therapeutic Design and Toxicity of Inhalable Nanoparticulate Aerosols, *University of Iowa, Department of Occupational and Environmental Health - Toxicology Research Seminar Series*, Dec 4, 2009.
2. The Particle Has Landed – Mucus, Surfactant and Lining Fluid Interactions, *1000 Years of Pharmaceutical Aerosols Conference, Reykjavik, Iceland*, Oct 2, 2009.
3. Nanotechnology, *University of Iowa, Environmental Health and Safety*, Jun 19, 2009.
4. Designing Nanotechnology for the Lungs, *University of Iowa, Nano REU Summer Program*, Jul 23, 2009.
5. Therapeutic Aerosols to Treat Respiratory Infections: From Biofilms to Mucosal Fluid Interactions, *University of Iowa, Department of Mechanical and Industrial Engineering*, Feb 26, 2009.
6. Exhaled Bioaerosol Formation: Toward New Strategies to Reduce Airborne Infectious Disease Transmission, *University of Iowa, Department of Chemistry – Physical and Environmental Chemistry Seminar Series*, May 5, 2008.
7. Particulate aerosols for the treatment of respiratory infections, *Particles 2008 Conference*, Orlando, FL, May 2008.
8. Advances in Aerosol Delivery, *IUPAC/OPCW Workshop: Impact of Scientific Developments on the Chemical Weapons Convention (International Union of Pure and Applied Chemistry/Organisation for the Prohibition of Chemical Weapons)*, Zagreb, Croatia, Apr 24, 2007.
9. Treating Tuberculosis via Inhaled Antibiotics, *University of Iowa, Department of Chemistry – Analytical Chemistry Seminar Series*, Apr 19, 2007.
10. Novel Aerosols for Treating Tuberculosis, *University of Iowa, College of Medicine: Pulmonary Conference*, Mar 26, 2007.
11. Engineering Novel Medical Aerosols: From the Bench to the Clinic, *University of Iowa, Department of Chemical and Biochemical Engineering*, Oct 12, 2006.
12. Biodegradable polymeric nanoparticles for drug delivery. *Applications for Nanoparticle Design and Microfabrication in Protein and Peptide Delivery Workshop: 3rd Annual Protein and Peptide Formulation Strategies*, Sponsored by the Institute for International Research, San Francisco, CA, Mar 2004.

PROFESSIONAL DEVELOPMENT - RESEARCH

1. Write Winning Grants Workshop Phase II, Ulowa Office of the Vice President for Research, May-Nov 2009.
2. Women Faculty Career Development Workshop, Ulowa Office of the Provost, Feb 27, 2009.
3. Write Winning Grants: A Workshop on the Fundamentals of Good Grant Writing, Ulowa Center for Conferences, Feb 26, 2008.

4. Faculty Development Workshop, Ulowa College of Pharmacy, Facilitator: Prof. Barry Carter, Spring 2007.

COLLABORATIONS

Prof. Peter Thorne, Department of Occupational and Environmental Health, University of Iowa

Prof. Julie Jessop, Department of Chemical & Biochemical Engineering, University of Iowa

Prof. Thomas Peters, Department of Occupational and Environmental Health, University of Iowa

Prof. Michael Apicella, Department of Microbiology, University of Iowa

TEACHING

COURSES

Semester	Course No.	Course Name (semester hours); Enrollment
Fall 2009	46:110	Drug Delivery I (6 hours of 3 s.h. course; co-taught with Profs. Maureen Donovan and Aliasger Salem); Enrollment: 28
Fall 2009	59:005	Engineering Problem Solving I: Discussion/Lab Sections (3 s.h.); Enrollment: 51
Fall 2009	46:123	Pharmaceutics I: Solutions (15 hours of 4 s.h. course); Enrollment: 113
Spring 2009	52:195/46:200	Special Topics: Nanotechnology in Health Sciences (1 s.h.); Enrollment: 21
Spring 2009	52:090	Chemical and Biochemical Engineering Departmental Seminar (0 s.h.; seminar for freshman); Enrollment: 32
Fall 2008	59:005	Engineering Problem Solving I: Discussion/Lab Sections (3 s.h.); Enrollment: 55
Fall 2008	46:123	Pharmaceutics I: Solutions (15 hours of 4 s.h. course); Enrollment: 113
Spring 2008	52:215	Intro to Lit Review & Proposal Writing (2 class periods; facilitated discussion of ethics case studies); Enrollment: 9
Spring 2008	52:090	Chemical and Biochemical Engineering Departmental Seminar (0 s.h.; seminar for freshman); Enrollment: 28
Fall 2007	59.005	Engineering Problem Solving I: Discussion/Lab Sections (3 s.h.); Enrollment: 63
Fall 2007	46:123	Pharmaceutics I: Solutions (15 hours of 4 s.h. course); Enrollment: 114

RESEARCH SUPERVISION – STUDENTS, FELLOWS, AND RESEARCH ASSISTANTS***Graduate Students***

1. Stacy Ross (Sommerfeld) (Jan. 2009-present), Ph.D. candidate in Chemical and Biochemical Engineering
Research area: *Dry powder aerosols for treatment of opportunistic respiratory infections*
Awards: Keith Guillory Pharmaceutics Fellowship (\$10,129 for 6 months)
2. Amir Mohammad Farnoud (Aug. 2008 – present), Ph.D. candidate in Chemical and Biochemical Engineering
Research area: *Behavior of particles at pulmonary fluid interfaces*
3. Mai Tu (Aug. 2008 – present), Ph.D. candidate in Pharmaceutics
Research area: *Biodistribution and toxicity of inhalable nanoparticles*
4. Rania Hamed (Aug. 2006 – present), Ph.D. candidate in Pharmaceutics
Research area: *Lung-derived bioaerosols: mechanism of formation and methods to suppress*
Awards: John L. Lach Memorial Scholarship (\$1,400), Ulowa Division of Pharmaceutics/Guillory Fellowship AAPS 2008 Travel Award (\$500), AAPS 2007 PDD Section Travel Award (\$250), Ulowa Division of Pharmaceutics AAPS 2007 Travel Award (\$250), UI Executive Council of Graduate and Professional Student (ECGPS) Scholarly Presentation Award (\$150), Dr. Eunice Schuytema Beam Travel Grant from the Women in Science and Engineering (WISE) Program (\$300)
5. Emily Thomas (Aug. 2006 – Mar. 2009), M.S. awarded May 2009, Chemical and Biochemical Engineering
Research area: *Dry powder aerosols for treatment of opportunistic respiratory infections*
Currently: Adjunct Faculty, Chemistry, Iowa Wesleyan College

Undergraduate Research Assistants, University of Iowa

6. Tianjiao Wang (Jan 2010-present), B.S. candidate in Chemical and Biochemical Engineering
Research topic: *Changes to nanoparticle surfaces induced by interactions with lung fluids*
7. Clarisse Baba (Sept 2009-present), B.S. candidate in Chemistry
Iowa Biosciences Advantage (IBA) program

- Research topic: *Development of nanoparticles by emulsion techniques*
8. Annie Kock (May 2009-present), B.S. candidate in Chemical and Biochemical Engineering
Research topic: *Dry powder aerosols for treatment of opportunistic respiratory infections*
Awards: Chemical Engineering Excellence in Undergraduate Research Grant (\$500)
 9. Laura Northup (Aug. 2008-May 2009), B.S. candidate in Chemical and Biochemical Engineering
Research topic: *Exhaled bioaerosols*
Awards: Chemical Engineering Excellence in Undergraduate Research Grant (\$500)
 10. Nikhil Anand (Feb. 2008-Jan. 2009), B.S. candidate in Biomedical Engineering
Research topic: *Formulation and optimization of corticosteroid-loaded polymeric aerosols for the treatment of asthma*
 11. Stacy Sommerfeld (Sept. 2007-Dec. 2008), B.S. candidate in Chemical and Biochemical Engineering
Research topic: *Formulation and optimization of aerosols containing a bacterial-killing enzyme*
Awards: Iowa Center for Research by Undergraduates (ICRU) Scholar Assistant (\$1250), Executive Council of Graduate and Professional Students (ECGPS) Research Grant (\$500), Excellence in Undergraduate Research Awards (EURA) (\$1000), Engineering Excellence in Undergraduate Research Award (\$500), Chemical Engineering Departmental Research Grant (\$500)
 12. Cassie Archer (Sept. – Dec. 2007), B.S. candidate in Chemical and Biochemical Engineering
Research topic: *Formulation and optimization of aerosols containing a bacterial-killing enzyme*

Undergraduate Research Assistants, Other Domestic Universities

13. Taryn Tang (May 2009-July 2009), B.S. candidate in Chemistry, Monmouth College
NSF-REU Program in Nanoscience and Nanotechnology
Research topic: *Nanoparticles for antibiotic delivery to the lungs*
14. Nearco Rodriguez (Jun. 2008-Aug. 2008), B.S. candidate in Biology, Medgar Evers College
AGEP Summer Research Program
Research topic: *Statistical design of aerosols to co-deliver antibiotics and bacterial dispersion compounds*
Awards: Annual Biomedical Research Conference for Minority Students – 2008 Travel Award Winner, UMBC Research Conference - 1st place winner, 41st Annual Metropolitan Association of College and University Biologists Research Conference - 1st place winner
15. Alexander Benson (Jun. 2008-Aug. 2008), B.S. candidate in Chemical Engineering, Carnegie Mellon University
Research topic: *Oxidation of glycoproteins for enhanced crosslinking*

Undergraduate Research Assistants, Foreign Exchange

16. Leticia Fernandez (Aug. 2008-May 2009), B.S. candidate in Chemical Engineering, Universidad de Santiago de Compostela (USC), Spain
Research topic: *Design of nanoparticulate aerosols*
Awards: College of Engineering Senior Research Poster Award, Excellence in Undergraduate Research CBE 2nd Place Poster Award (\$120), Nanoscience and Nanotechnology Institute Honorable Mention Poster Award

Postdoctoral Fellows

17. Timothy Brenza (Aug. 2008-present)
Research topic: *Responsible design of inhalable nanomaterials*
Awards: PhRMA Foundation Postdoctoral Fellowship (\$40,000 per year for 1.5 years)

Research Assistants

18. Buffy Ann Stohs (Jan. 2007-Jun. 2008), Research Assistant I
Current position: Silliker Laboratories, Cedar Rapids

PH.D. COMMITTEE MEMBERSHIP

Member on Ph.D. Candidate Comprehensive Examinations

Dahai Jiang (Pharmaceutics; Supervising Professor: Aliasger Salem), 3/26/2010
Nan Chen (Pharmaceutics; Supervising Professor: Maureen Donovan), 8/20/2009
Lanyi Xie (Pharmaceutics; Supervising Professor: Peter Veng-Pedersen), 6/30/2009
Yogita Krishnamachari (Pharmaceutics; Supervising Professor: Aliasger Salem), 6/29/2009
Chih-Wei Lin (Pharmaceutics; Supervising Professor: Peter Veng-Pedersen), 3/27/2009
Jiang Qiu (Pharmaceutics; Supervising Professor: Lee Kirsch), 6/16/2008
Jessica Melanko (CBE; Supervising Professor: Aliasger Salem), 12/17/2007
Alicia Pettibone (CBE; Supervising Professor: Charles Stanier), 5/8/2007
Janjira Intra (Pharmaceutics; Supervising Professor: Aliasger Salem), 12/6/2006

Member on Ph.D. Defense Committee

Alicia Pettibone (CBE; Supervising Professor: Charles Stanier), 7/7/2009
Hefei Zhang (Pharmaceutics; Supervising Professor: Maureen Donovan), 12/15/2008
Janjira Intra (Pharmaceutics; Supervising Professor: Aliasger Salem), 12/2/2008
Chen-Ming Lee (Pharmaceutics; Supervising Professor: Maureen Donovan), 5/16/2008
Mow Yee Foo (Pharmaceutics; Supervising Professor: Maureen Donovan), 7/16/2007

PROFESSIONAL DEVELOPMENT - TEACHING

1. White Privilege: Lessons learned from Both Sides of the Ocean, Office of International Students and Scholars, Nov. 19, 2009.
2. Cross-Cultural Insights into Supervising and Being Supervised, Office of International Students and Scholars, Feb 18, 2009.
3. Large Class Summit, Office of the Provost and Center for Teaching, Feb 6, 2009.
4. Building a Global Community – Introductory Workshop, Office of International Students and Scholars, Feb 3, 2009.
5. Diversity and Inclusive Teaching and Learning, Ulowa Center for Teaching, Jan 27, 2009.
6. Millennial Learners, Ulowa Center for Teaching, Jan 30, 2008.
7. Iowa Undergraduates: Who They Are and Why it Matters, Ulowa Center for Teaching, Jan 24, 2008.
8. ASEE Chemical Engineering Summer School for Faculty, Washington State University, Jul 28 – Aug 2, 2007.
9. How to Click with your Students: Student Response Systems in Support of Good Practice, Ulowa Center for Teaching, Feb 28, 2007.
10. Creating a Professional Portfolio: Putting Your Best Face Forward, Ulowa Center for Teaching, Feb 6, 2007.

SERVICE

SERVICE WITHIN THE DEPARTMENTS AND UNIVERSITY

College of Pharmacy Committees

2008 – 2009 Accreditation Committee – Student Standards
2008 – 2009 College Laboratory Safety Committee
2007 – 2008 Information Technology Committee

Department of Chemical and Biochemical Engineering

2008-present Undergraduate student advising
2008-present Coordinate Chemical and Biochemical Engineering Departmental Seminar
(seminar for declared chemical engineering freshman held each spring)

College of Engineering

Faculty judge, College of Engineering Research Open House, April 2008 and 2009.

University Service

Faculty judge for paper submissions and oral presentations, James F. Jakobsen Graduate Conference; Mathematical, Physical & Engineering Sciences Division, 2008 and 2009.

Other

Member, working group developing a Pharmaceutical Engineering and Science degree program between the Colleges of Engineering and Pharmacy, 2008 – present.

SERVICE - COMMUNITY, STATE, NATIONAL

Presenter of “Engineering Medicines” Career Workshop, Open Minds, Open Doors Conference for Middle School Girls, Cedar Rapids: 24 students, Oct 13, 2009.

Program Director and Developer, PharmCamp (a week-long day camp for middle school girls focused on hands-on experiments with pharmaceutical dosage forms and exposure to career opportunities in pharmaceutical fields), University of Iowa: 18 students, Jul 27-31, 2009.

Co-presenter (with Prof. Julie Jessop) of “It’s not a stretch – you can be an engineer too!”, Open Minds, Open Doors Conference for Middle School Girls, Cedar Rapids: 36 students, Oct. 14, 2008.

Solon High School Career Day Presenter for Chemical Engineering: ~30 students in 9th-10th grade, Apr 18, 2007; 25 students, Apr 23, 2008.

Grant Wood EAE Physics Olympics Judge, Kirkwood Community College, Cedar Rapids, Apr 2, 2007.

SERVICE WITHIN THE RESEARCH COMMUNITY

Articles reviewed for the following journals:

Biomacromolecules
Critical Care
European Journal of Pharmaceutical Sciences
European Polymer Journal
Expert Opinion on Drug Metabolism and Toxicology
International Journal of Pharmaceutics
Journal of Biomedical Materials Research: Part A
Journal of Controlled Release
Journal of Pharmacy and Pharmacology
Journal of the Royal Society Interface
Langmuir
Nanomedicine: Nanotechnology, Biology and Medicine
Pharmaceutical Research

Grant proposals reviewed for the following agencies:

National Institutes of Health, National Institute of Allergy and Infectious Diseases (NIAID)
National Science Foundation
Work Safe British Columbia

Other expert reviews of proposals (books and colloquia) for the following:

John Wiley & Sons (pharmaceutical book)
Indo-US Science & Technology Forum (colloquia)

Sessions Organized and/or Chaired

1. Disease Therapies; Food, Pharmaceutical & Bioengineering Division, American Institute of Chemical Engineers Annual Meeting, Nashville, TN, Nov. 2009 (with Profs. Mariah Hahn and Stavroula Sofou).
2. Bionanotechnology for Gene and Drug Delivery III; Nanoscale Science and Engineering Forum, American Institute of Chemical Engineers Annual Meeting, Nashville, TN, Nov. 2009 (with Prof. Sandro da Rocha).
3. Nanotechnology for Biotechnology and Pharmaceuticals I and II; Nanoscale Science and Engineering Forum, American Institute of Chemical Engineers Annual Meeting, Nashville, TN, Nov. 2009 (with Prof. Thomas Dziubla).
4. Bionanotechnology for Gene and Drug Delivery III, American Institute of Chemical Engineers Annual Meeting, Philadelphia, PA, Nov. 2008 (with Prof. Sandro da Rocha).
5. Nanotechnology for Biotechnology and Pharmaceuticals I and II, American Institute of Chemical Engineers Annual Meeting, Philadelphia, PA, Nov. 2008 (with Prof. Thomas Dziubla).
6. Nanotechnology for Biotechnology and Pharmaceuticals Industries, American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, Nov. 2007 (with Prof. Corey Berkland).
7. Advances in Biomaterials, 20th Annual American Chemical Society Rocky Mountain Regional Meeting, Denver, CO, Sept. 2007 (Co-chair with Prof. Matt Kipper).

PROFESSIONAL SOCIETY MEMBERSHIPS

American Society for Engineering Education
International Society for Aerosols in Medicine
American Institute of Chemical Engineers
Society for Biological Engineering
American Association of Pharmaceutical Scientists
Controlled Release Society
Society of Women Engineers
Tau Beta Pi (Engineering Honors Society)